

# DAWN

## Doppler Aerosol WiNd lidar

NASA Langley's DAWN project occurred in fiscal years 2008 – 2010. Its goal was to compactly and robustly package the 2-micron, Ho:Tm:LuLiF, pulsed laser technology developed at Langley for eventual global wind measurements from earth orbit. Langley has demonstrated a world record 1200 mJ of pulse energy with this technology. However, simulations of the space mission indicate a requirement of 250 mJ pulse energy. Since derating of technology is wise for space missions, DAWN was targeted at 250 mJ. DAWN leveraged the significant laser development that had occurred in NASA's Laser Risk Reduction Program (LRRP). The project ended successfully with demonstration of excellent atmospheric wind measurement from the ground, and of robustness and compactness. DAWN has led to the follow-on projects DAWN-AIR1 and DAWN-AIR2. DAWN was funded by NASA's Earth Science Technology Office (ESTO) through the Instrument Incubator Program (IIP).

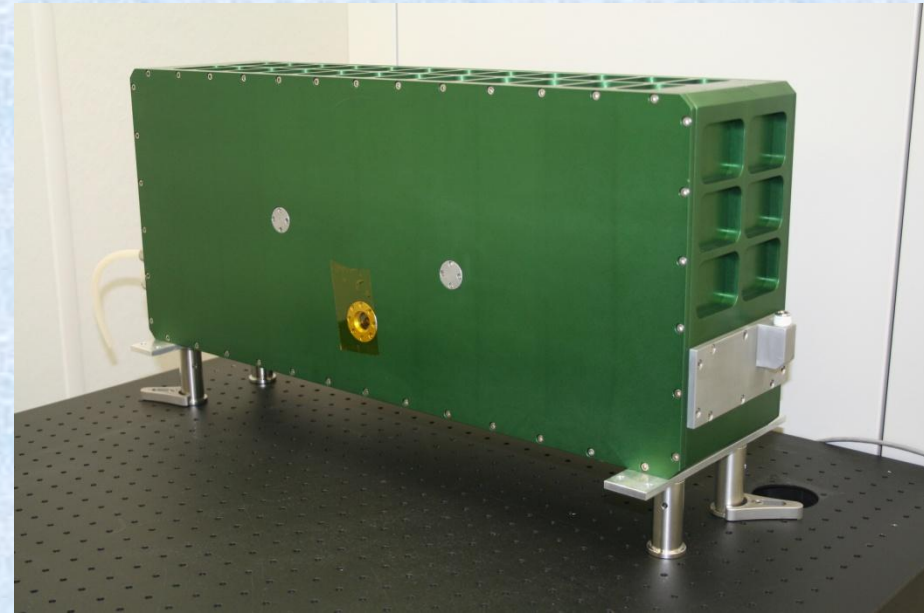


DAWN Transceiver (Transmitter + Receiver)  
250 mJ/pulse, 10 pulses/sec.  
5.9" x 11.6" x 26.5", 75 lbs.; 15 x 29 x 67 cm, 34 kg  
(no telescope or scanner)



Previous implementation

90 mJ per pulse



Completed DAWN package

Small, Robust, 250 mJ per pulse